

SMIRNOVA, K.M.; GLAZUNOVA, N.M.

Dynamics of chemical properties of soils under variherbaceous  
stands. Vest. Mosk. un. Ser. biol., pochv., geol., geog. 13  
no.2:109-120 '58. (MIRA 11:9)

1. Moskovskiy gos. universitet, Kafedra pochvovedeniya.  
(Forest soils) (Soil chemistry) (Birch)

SMIRNOVA, K.M., GORODENTSEVA, G.A.

Consumption and circulation of nutritive elements in birch woods  
[with summary in English]. Biul.MOIP. Otd.biol. 63 no.2:135-145  
Mr-Ap '58 (MIRA 11:7)  
(BIRCH)

REMEZOV, Nil Petrovich; BYKOVA, Lyubov' Nikolayevna; SMIRNOVA, Klavdiya  
Mikhaylovna; POMALEN'KAYA, O.T.. red.; GEORGIYeva, G.I., tekhn.red.

[Nitrogen and mineral consumption and cycle in forests of the  
European part of the U.S.S.R.] Potreblenie i kurgovorot azota i  
zol'nykh elementov v lesakh evropeiskoi chasti SSSR. Moskva,  
Izd-vo Mosk.univ., 1959. 282 p. (MIRA 13:3)  
(Forests and forestry)

KOSTYUK, Polikarp Aleksandrovich; SMIRNOVA, K.M., red.; BELEN'KAYA,  
I.Ye., tekhred.

[Computing and accounting for collective farm profits] Ischislenie i uchet dokhodnosti kolkhozov. Minsk, Izd-vo Belgosun, im. V.I.Lenina, 1960. 63 p. (MIRA 13:10)  
(Collective farms--Accounting)

MARTOVITSKIY, Viktor Ignat'yevich; SIKORSKIY, V.M., otv. red.;  
SMIRNOVA, K.M., red.; BELEN'KAYA, I.Ye., tekhn. red.

[The party's slogan "Look to the rural areas" and its realization in White Russia during 1924 and 1925] Lozung partii "Lit'som k derevne!" i ego osushchestvlenie v BSSR v 1924-1925 gg. Minsk, Izd-vo M-va vysshego, srednebo spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 134 p. (MIRA 15:1)  
(White Russia---Agricultural policy)

SMIRNOVA, K.N., nauchnyy sotrudnik.

Streptomycin therapy in tuberculous meningitis. Probl.tub. no.1:  
29-36 Ja-F '54. (MLRA 7:3)

1. Iz Moskovskogo gorodskogo nauchno-issledovatel'skogo tuberkuleznogo  
instituta (direktor - professor V.L.Eynis, zaveduyushchiy tret'im  
terapevticheskim o'deleniyem - kandidat meditsinskikh nauk T.N.  
Oleneva). (Streptomycin) (Tuberculosis) (Meningitis)

SMIRNOVA, K.N. (Kirov), MISHUL'SKAYA, K.N. (Severodonetsk):

Nurses' councils. Med. sestra 17 no.12:41 D'58 (MIRA 11:11)

1. Predsedatel' soveta meditsinskikh sestr (for Smirnova).  
(NURSES AND NURSING)

CA

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The hardening of cog-wheel gears by means of the oxy-acetylene flame. K. N. Smirnov. *Metallurg* 12, No. 12, 55-62 (1937); *Chem. Zentr.* 1938, II, 1301. The theoretical principles of casehardening with a welding flame are discussed. Hardening expts. showed that the optimum distance between the cooling jet and the burner (10 to 15 mm) is dependent on the composition of the steel. When this distance is increased beyond the optimum, the depth of hardening increases; when it is reduced below the optimum, the hardening is nonuniform. The width of the burner depends on the width of the object to be heated. The optimum distance between the burner and the teeth of the gear depends on the capacity of the burner; it is 5-6 mm. for a multiple burner and 3-4 mm. for a single burner. Water of 45-50° or compressed air can be used as a cooling agent. Increasing the burner velocity increases the depth of hardening and the surface temp. Reducing this velocity makes possible the overheating of the gear teeth, increases the depth of hardening and increases the danger of cracking. In the expts. reported the velocity was about 120 mm. per min. Steels of the following compns. are recommended for this purpose: a steel with 0.45% C and another with 0.25-0.35% C, 0.6-1.25% Cr and 2.8-3.5% Ni. In order to assure the least deformation the grain size of the steel should be about 4 according to the McQuaid-Ehn test.

M. G. Moore



SMIRNOVA, K.K. HEAD OF THE CENT LAB

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USSR/Metallurgy - Casting, Methods

Nov 52

"Experience in Gear Casting by the Centrifugal Method," I. Bobrov, Chief Metallurgist, and K. Smirnova, Head of the Cent Lab, Mytishchi Mach Bldg Plant

Za Ekon Materialov, No 4, pp 77-79

Discuss recent conversion from sand casting to centrifugal casting of gears at Mytishchi Mach Bldg Plant. New casting technology permitted reduction of rejection from 70% to 45% and achieved considerable savings in metal and molding materials.

264T66

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SMIRNOVA, K. N.

USSR Metallurgy - Steelmaking.  
Equipment

"Packed Lining for a Small Converter,"  
I. I. Bobrov, K. N. Smirnova, Engineers

"Litey Proizvod" No 6, pp 7, 8

States that in 1940 Mytishchi Mach Bldg Plant initiated use of packed lining instead of brick work, and during last war this type of lining for small Bessemer converters was introduced into industry. Describes prepn of lining mix, and packing and drying procedure. Finds endurance of packed lining is higher by 5-10 blows than that of brick lining.

23GT36

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3837

Author : Bidulya, P.N., Bobrov, I.I., Smirnova, K.N.

Title : Crystallization of Liquid Steel under Pressure

Orig Pub : Liteynoye proiz-vo, 1956, No 7, 1-4

Abstract : No abstract

Card : 1/1

*S. MIRNOVA, K. N.*

14927\* (Russian.) Crystallization of Liquid Steel Under  
Pressure. Kristallizatsiia zhidkoi stali pod davleniem. P. N.  
Bidulia, I. I. Bobrov, and K. N. Sinimova. *Litetsnoe Proizvod-*  
stvo, 1956, no. 7, June 1956, p. 1-4.  
Equipment and methods. Advantages in comparison with ordi-  
nary cast and rolled steels.

*3*

SMIRNOVA, K. N.

- Solidification of Metals ; (~~Cont.~~) Trans. of 2nd Conf. on ~~1916~~ Theory of Foundry Processes, 1956, Moscow Mashgiz, 1956, 532pp.
- Chukhrov, M.V., Candidate of Technical Sciences. Investigation of the Process of Crystallization of Magnesium-alloy Ingots 413
- Rabinovich, B.V., Candidate of Technical Sciences. Experimental Investigation of the Solidification of White-Iron Ingots and the Determination of the Dimensions of Side Risers 428
- Korol'kov, P.M., Candidate of Technical Sciences. Effect of Alloy Composition on Shrinkage Phenomena and Crack Formation in the Solidification of Castings 446
- Neymark, V.Ye., Candidate of Technical Sciences. Obtaining Cast Products by the Vacuum-Crystallization Method 465
- Smirnova, K.N., Engineer. Production of Steel Blanks by Compression During the Crystallization Process 480
- Medvedev, Ya.I., Engineer. Formation of Cold Shuts in Heavy Castings and Calculation of the Metal-pouring Rate 484

Card 7/8

SOV/137-58-12-24472

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 12, p 74 (USSR)

AUTHOR: Smirnova, K. N.

TITLE: Press-forming Steel During Crystallization (Pressovaniye stali v period kristallizatsii)

PERIODICAL: Tyazh. prom-st' Podmoskov'ya, 1958, Nr 1, pp 13-17

ABSTRACT: Molten steel (St) is pressed in dies on 50 to 870-t hydraulic presses. The fundamental conditions affecting derivation of the required properties in the pressed products (unit pressure, initial temperature of the die, time during which the product is held under pressure) and problems of die service life are studied. The pressed parts are studied for condition of exterior surface, macro- and microstructure, specific gravity with respect to the entire volume of the item, and mechanical properties. The weight of billets for cylindrical gears is 2-18 kg, while for flat ingots it is 1-30 kg. The specimens of pressed St revealed high mechanical properties, were isotropic in various directions, and exhibited high density and a fine-grain structure. A die design is developed that satisfies safety requirements. Dies of Nrs 3 and 20 St show the longest life. The optimum

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SOV/137-58-12-24472

Press-forming Steel During Crystallization (cont.)

temperature for heating the die is found to be 150-200°. The yield of good product is 90-95% of the weight of the molten metal.

Ye M.

Card 2/2

SOV/137-59-1-1243

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 169 (USSR)

AUTHOR: Smirnova, K. N.

TITLE: The Microstructure of Steel Following Heat Treatment (Mikrostruktura stali posle termicheskoy obrabotki)

PERIODICAL: V sb.: Materialy Soveshchaniya glavn. metallurgov z-dov i in-tov avtomob. prom-sti. Nr 3. Moscow, 1958, pp 54-55

ABSTRACT: A brief communication on work performed at the Central Laboratory of the Mytishchi Machinery Plant during 1956 and 1957

Reviewer's initials not given

Card 1/1



20275

11500

also 1454, 1496

S/148/60/000/009/006/025  
A161/A030

AUTHORS: Bidulya. P.N., and Smirnova. K.N.

TITLE: Peculiarities of liquid steel pressing under high pressure

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,  
no. 9, 1960, 43-49

TEXT: Pressing during crystallization is used for copper and aluminum alloys, but it has not yet been used for steel in the USSR or abroad. Detailed information is given on the application of high pressure for the production of steel parts from semi-liquid steel subjected to high pressure during crystallization in a press mold. The difference from the conventional pressure die casting consists in pressing until the metal completely solidifies. Pressure has to be not below 5-6 kg/mm<sup>2</sup>. The method has been used for producing wheels (Fig. 3). Semi-liquid steel can be measured quite accurately for filling the mold, and this means 1.5 to 3 times less metal waste compared to conventional hot stamping. The metal crystallized under pressure is completely sound, without any shrinkage cavities or porosity at the axis. The density, mechanical strength and plasticity of Bessemer

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S/148/60/000/009/006/025  
A161/A030

Peculiarities of liquid steel ...

steel pressed in this way surpass these properties of not only cast but even forged and rolled metal. No segregation zones could be revealed in pressing by etching; over 90% of the liquid metal is utilized. First experiments (Ref.3) (P.N.Bidulva, I.I.Bobrov and K.N.Smirnova, "Liteynoye proizvodstvo", 1956, No.7) failed because of the insufficient pressure used. Various press mold designs had been tried since until the final mold was made. [Abstracter's note: No illustration or further description of the mold design is included]. The mold is installed in a hydraulic press. Hydraulic presses are the best suitable as pressure is applied without impact and can be maintained. Two pressing method variations are illustrated (Fig.1 and 2) schematically. The dies and punches made from soft 10Л (10L) steel withstand 2500 pressings provided that water cooling is used in the pressing process. The dimensions of pressings are near the required final. The effect of the applied pressure value on the mechanical properties of steel work has been studied. Spur gears of "45" steel were pressed for testing in the hydraulic mechanism of a dumpcar and remained good after the guaranteed time of life; blanks of P 18 (R18) for cylindrical milling cutters were tested and found satisfactory. It is mentioned that the pressing

Card 2/6

Peculiarities of liquid steel ...

20275  
S/148/60/000/009/006/025  
A161/A030

process had been tried for the first time in 1943 at the machine plant in Mytischchi by a group of engineers headed by Engineer I.I. Bobrov. Experiments are continued for determining all technical details for series and mass production. There are 6 figures and 3 Soviet-bloc references.

ASSOCIATION: Moskovskiy vecherniy metallurgicheskiy institut (Moscow Evening Institute of Metallurgy) and Mytischchenskiy mashinostroitel'nyy zavod (Mytischchi Machine Plant)

SUBMITTED: 26 March 1960

Card 3/6

X

KAPUSTIN, Ye.I., red.; SMIRNOVA, K.V., red.; SHIKIN, S.T., tekhn. red.

[Reference materials on labor and wages] Spravochnye materialy po  
trudu i zarabotnoi plate. Pod red. E.I.Kapustina, Moskva, 1960.  
238 p. (MIRA 14:11)

1. Moscow. Nauchno-issledovatel'skiy institut truda.  
(Labor and laboring classes--Handbooks and manuals)  
(Wages--Handbooks and manuals)

3

Solov'ev, N. V. - "Asiiriva Iugoslavi in Latv' Balinas", Uchen. zapiski (Leningr. univ. ser. iuch. i filol. iest. im. Pushkina), Issue 1, 1948, (Solov'ev-reading: 1948, Article 11), p. 1-5.

SO: U-3242, 11 March 53, (Izvestia Zhurnal 'nykh Statey, No. 3, 1949).

3-11-47, p. 1.

Svirnova, N. V. - "On the Problem of Fish in Ala-Kul'skoye Lake", (Izv. Gos. univ. Ural'skogo gos. i uchitel. inst. im. Fuchkina), Issue 3, 1947, (Column-heading: 1947, article 12), p. 1-3.

SO: U-3443, 11 March 53, (Izvestia Zhurnal 'nykh Statey, No. 3, 1949).

Смирнов, . . .

Smirnov, K. V. - "On the parasitology of the fish at the Alta-Alta camp territory",  
Uchen. zapiski (Ural'skiy ped. i uchitel. inst im. Pushkina), Issue 1, 1947,  
(Column-headers: 1947, Article 13), p. 1-3.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949).

USSR / Zooparasitology. General Problems.

G

Abs Jour: Ref Zhur-Biol., No 6, 1959, 24178.

Author : Smirnova, K. V.  
Inst : Rostov-on-Don University.  
Title : Parasitofauna of Fish of the Tsymlyanskoye and  
Manych Reservoirs. Investigations of 1952 and  
1953 (Tsymlyanskoye Reservoir).

Orig Pub: Uch. zap. Rostovsk. n/D. un-ta, 1957, 58, 103-  
115.

Abstract: 200 specimens of the fry of 20 fish species (the  
fish were obtained from seine catches) were inves-  
tigated. In bream, roach, and Chondrostoma nasus,  
under the skin and on the fins a nematode Neascus  
cuticola was discovered; in Cyprinidae, Diplos-  
tomulum spathaceum was found in the crystalline  
lens. Single specimens of carp (sazan), bream and

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USSR / Zooparasitology. General Problems.

Abs Jour: Ref Zhur-Biol., No 6, 1959, 24178.

Abstract: perch were found with signs of septicemia hemor-  
rhagica. It was noted that in 1952 the parasito-  
fauna of the fish of Tsymlyanskoye Reservoir be-  
came impoverished as compared with the parasito-  
fauna of the Don River fish before the regulation  
of the Don River; the intensity of infection and  
the frequency of incidence of cestodes, nematodes  
and digenetic trematodes decreased due to a low  
population of mollusks. In 1953, the species com-  
position of parasites became enriched and the in-  
tensity of infection increased. The abundance of  
monogenetic trematodes (they were absent only in  
tench and perch), digenetic trematodes (absent in  
sheatfish), cestodes and, especially, crawfish  
parasitic upon Percidae, increased. In 1952-1954,

Card 2/4



SOROLEVA, R.G.; SMIRNOVA, K.V.; ZALEZHSEIY, G.V.

Rodents in dump heaps and eradication methods. Gig. i san. 23 no.12:78  
D '58. (MIRA 12:1)

(MOSCOW--RATS--EXTERMINATION)

SMIRNOVA, K.V.

Dynamics of the parasite fauna of fishes in Tsimlyansk Reservoir during the five years of its existence. Trudy sov.Ikht.kom. no.9:123-128 '59. (MIRA 13:5)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.  
(Tsimlyansk Reservoir--Parasites)  
(Parasites--Fishes)

EYENBINDER, V., inzh.; SMIRNOVA, L.

Temperature stability of cascade amplifiers using transistors.  
Radio no.10:36 0 '65. (MIRA 18:12)

KHUNDANOV, I. Ye.; SHEVLENKO, Ye. D.; LITVINOVA, L. A.; DUDKOVA, Ye. K.; KULEKOVA, G. G.

Sulfanilamide preparations in experimental melioidosis. Veterinariia  
39 no.4:51-52 Ap '62. (MIRA 17:10)

1. Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy protivochumnyy institut Sibiri i Dal'nego Vostoka.

MAKSIMOVICH, Georgiy Grigor'yevich, kand. tekhn. nauk; KRIPYAKEVICH,  
Roman Ivanovich, kand. tekhn. nauk; TUCHKOVA, L.K., inzh.,  
ved. red.; SMIRNOVA, L.A., inzh., red.; SOROKINA, T.M.,  
tekhn. red.

[Automatic device for differentiated checking of threads] Av-  
tomat dlia differentsirovannogo kontrolya rez'b. Moskva, Fi-  
lial Vses. in-ta nauchn. i tekhn.informatsii, 1958. 12 p.  
(Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Te-  
ma 21. M-58-208/11) (MIRA 16:2)  
(Screw threads--Testing)

130-58-4-10/20

AUTHORS: Medzhibozhskiy, M.Ya., Candidate of Technical Sciences,  
Tunkov, V.P., Smirnova, L.A., Engineers.

TITLE: Effectiveness of Blowing Compressed Air into the Bath of  
a Cold-charged Open-hearth Furnace (Effektivnost' vduvaniya  
szhatogo vzdukh v vannu martenovskoy pechi pri skrap-  
protssesse)

PERIODICAL: Metallurg, 1958, Nr 4, pp 17 - 19 (USSR).

ABSTRACT: The proposal to blow compressed air into the bath of  
open-hearth furnaces was made in 1939, when trials were run at  
the "Krasnyy Oktyabr" Works. These (and later ones at the  
Kuznetskiy metallurgicheskikh kombinat (Kuznetsk Metallurgical  
Combine) ) showed that production increases of 15 - 20 and  
8 - 10% could be obtained thereby on 10 to 30-ton and over  
185-ton furnaces, respectively. The authors discuss this work,  
explaining the action of the injected air to be that of stirring  
the bath and thereby facilitating contact with the hot furnace  
oxygen. They cite work at the above and also at the Serp i  
Molot Works to show that air blowing is advantageous with cold-  
charged furnaces, giving as illustration details of one  
experimental heat at the Kuznetsk Combine carried out by  
Medzhibozhskiy with the participation of I.A. Sokolova and  
M.M. Bazhenova in 1954 (Figure 1). The authors refer to

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130-58-4-10/20

Effectiveness of Blowing Compressed Air into the Bath of a Cold-charged Open-hearth Furnace

development work on the process at the Serp i Molot Works on 70-ton cold-charged furnaces carried out with the participation of engineers Ya.L. Rozenblit, G.V. Sviridov, L.A. Smirnova and A.D. Zaytseva, which led to the adoption of the method in 1951. This work showed compressed air to be as effective as oxygen and since 1953 air has been used preferentially. Analysis of results shows that with a blowing time of 30 - 40 minutes, the changing-to-tap time is reduced by about 40 min below the unblown value (Figure 2). Decarburisation rates are about the same as with oxygen blowing, the value of the ratio (oxygen for carbon-oxidation)/ (total oxygen blown into the bath) being 1 - 1.5 for oxygen and about 7 for air. Long experience at this and other works shows that steel quality (including nitrogen content) does not suffer through air blowing, and the decrease in furnace life through splashing, etc. is not great. The use of lagged lances has increased lance life and enabled immersion depths to be strictly controlled, thus minimising splashing. There are 2 figures and 2 tables.

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Effectiveness of Blowing Compressed Air into the Bath of a Cold-  
charged Open-hearth Furnace 130-58-4-10/20

ASSOCIATIONS: Sibirskiy metallurgicheskiy institut (Siberian  
Metallurgical Institute) and the "Serp i Molot" Works.

Card 3/3



SMIRNOVA, L.A.

25(1,6) PRAISE I BOOK EXPLOITATION 309/592

Академия наук СССР. Институт машиноведения

Основы теории точности, взаимосвязей точности и технологичности  
изменчивости в машиностроении (Basic Problems of Accuracy, Inter-  
changeability and Engineering Measurements in Machine Building)  
Moscow, Mashgis, 1958. 311 p. 4,500 copies printed.

Ed.: A.M. Gavrilov, Doctor of Technical Sciences, Professor;  
Tech. Ed.: B.I. Medel', Managing Ed. for literature on Metal  
Working and Tool Making (Mashgis); N.D. Baysel'man, Engineer.

PURPOSE: This collection of articles is intended for engineering  
and scientific workers and for teachers and students of machine  
and instrument building vtuses.

COVERPAGE: This collection of article presents the works of a con-  
ference on basic problems of accuracy, interchangeability and  
engineering measurements, convened in March 1956 by the Machine  
Building Academy of the USSR, the Academy of Sciences of the  
USSR, the Ministry of Higher Education of the USSR, the  
State Committee for Modern Technology, the Council of the  
Standard Weights and Measures, the State Committee for the  
Ministry of Higher Education of the USSR. In the articles  
dealing with accuracy of fabrication, problems of the theory and  
practice of calculating accuracy of standard processes and  
standard products are discussed. In the articles on inter-  
changeability and engineering measurements an evaluation of the  
present state of this field is presented along with the  
scientific and engineering outlook for the future. Theoretical  
and practical problems of automatic inspection are discussed.  
No personalities are mentioned. There are 140 references of  
which 121 are Russian, 10 German, 8 English, 1 French.

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Basic Problems of Accuracy (Cont.) 309/592

✓ Zlobeyev, G.A., Candidate of Technical Sciences. Thermal Errors in Measurements	309
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Card 7/8

9.2572

25951

S/141/61/004/001/011/022  
E033/E435

AUTHORS: Gershenzon, Ye.M., D'yakov, Yu.Ye., Soina, N.V.,  
Smirnova, L.A. and Etkin, V.S.

TITLE: Widening the passband of parametric amplifiers with the  
help of coupled circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,  
1961, Vol.4, No.1, pp.121-125

TEXT: The relatively narrow frequency passband of tuned  
parametric amplifiers is not a fundamental deficiency and can be  
overcome by the use of coupled tuned circuits. This article  
investigates the possibility of widening the passband by two  
coupled circuits. The amplifier is represented as two identical  
coupled circuits tuned to the same frequency  $\omega_0$ , but the capacity  
of one circuit is varied at a frequency  $\omega_H = 2\omega_0$ . The  
differential equations for such a driven oscillatory circuit may  
be written as

$$\frac{d^2 q_1}{dt^2} + 2h \frac{dq_1}{dt} q_1 \omega_0^2 [1 + m \cos \omega_H t] + \gamma \frac{d^2 q_2}{dt^2} = e^{j\omega t} + e^{-j\omega t}; \quad (2)$$

$$\frac{d^2 q_2}{dt^2} + 2h \frac{dq_2}{dt} + q_2 \omega_0^2 + \gamma \frac{d^2 q_1}{dt^2} = 0;$$

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E033/E435

Widening the passband ...

where  $\eta = M/L$  - the coupling coefficient;  $2h = R/L$ ;  $\omega_0^2 = 1/LC_0$ ;  $L, R$  being the self-inductance and resistance of each circuit,  $M$  the mutual inductance,  $C_0$  the constant capacity of the tuned circuit. The variable capacity  $C_1$  is related to  $C_0$  by  $C_1^{-1} = C_0^{-1}(1 + m \cos \omega_H t)$ . The solution depends on the degree of coupling. It is shown that: 1) if the coupling is less than, or equal to, critical ( $\kappa = \eta Q \leq 1$ ) then the amplifier is excited only at the frequency  $\omega_H/2$  and the critical modulation depth increases  $(1 + \kappa^2)$  times in comparison with a single tuned circuit; 2) if the coupling is greater than critical ( $\kappa = \eta Q > 1$ ) then the amplifier is excited at three frequencies:  $\omega_1 = \omega_H/2$ ,  $\omega_2$  and  $\omega_3$  which correspond to detuning  $\alpha_1 = \pm \sqrt{\kappa^2 - 1}/Q$  ( $\omega_2$  and  $\omega_3$  are approximately the same as for the frequencies of the normal oscillatory system). As far as the passband widening is concerned only the first case, when  $\kappa \leq 1$ , is of interest (since with coupling greater than critical, the frequency response curve is double humped with a deep drop in the middle). The gain  $k$  and the passband  $\Delta f/f$  are found next.

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Widening the passband 25951

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$$k = \frac{Q^2}{Q_{\text{ext}}^2 n^2} \frac{1}{(1 + \kappa^2)^2} \quad (8)$$

where  $Q_{\text{ext}} = 1/Z\omega_0 C_0$ ;  $n = 1 - m^2/m_{\text{cr}}^2$

$Z$  is the wave impedance of the supply line to the amplifier;  
 $m_{\text{cr}}$  is the critical modulation. For  $n \ll 1$ , the passband equals

$$\frac{\Delta f}{f} \approx \frac{n}{Q} \frac{1 + \kappa^2}{1 - \kappa^2} \quad (9)$$

and hence

$$\frac{\Delta f}{f} \sqrt{k} = \frac{1}{Q_{\text{ext}}} \frac{1}{1 - \kappa^2} \quad (10)$$

If  $\kappa < 1$ , reduction in the gain is accompanied by increase in the passband and the product  $(\Delta f/f) \sqrt{k}$  can be significantly greater than for a single circuit. The phase change introduced into the  
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Widening the passband ~~25951~~

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E033/E435

signal is given by

$$\operatorname{tg} \varphi = \frac{\alpha_1 Q}{n} \frac{1 - \kappa^2}{1 + \kappa^2} \quad (12)$$

where  $\alpha_1 = 1 - (\omega^2/\omega_0^2)$ . The frequency response curves are illustrated. The theoretical results were confirmed on an experimental model at 4.5 Mc/s frequency. For the single-circuit amplifier, the passband was 50 kc/s and the gain 20 dB; for the coupled circuit case, the passband was 150 Mc/s. Thus  $(\Delta f/f)\sqrt{k}$  was increased from 1/9 to 1/3. The use of coupled circuits leads to a similar widening at uhf, e.g. for a single circuit amplifier with  $k = 20$  dB, bandwidth  $\approx 15$  Mc/s; for a double circuit amplifier with  $k = 20$  dB, the bandwidth is 45 to 50 Mc/s. There are 3 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications read as follows: H.Heffner, G.Wade, J.Appl.Phys., 29, 1262 (1958); H.Heffner, K.Kotzebue, Proc.IRE, 46, 1301 (1958); G.F.Herrmann, M.Uenohara, A.Uhlir, Proc.IRE, 46, 1301 (1958).

Card 4/5

Widening the passband ... 25951

S/141/61/004/001/011/022  
E033/E435

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V.I.Lenina  
(Moscow Pedagogical Institute imeni V.I.Lenin)

SUBMITTED: July 7, 1960

Card 5/5

YUFIT, S.Ye.; KNYAZEV, M.D.; SMIRNOVA, L.A.

Importance of a complex study of the blood coagulation system in  
Leriche's syndrome. Terap.arkh. no.7:24-29 J1 '62. (MIRA 15:8)

1. Iz gospi'tal'noy khirurgicheskoy kliniki (dir. - deystvitel'nyy  
chlen AMN SSSR prof. B.V. Petrovskiy) I Moskovskogo ordena Lenina  
meditsinskogo instituta imeni I.M. Sechenova.  
(ARTERIOSCLEROSIS) (AORTA--DISEASES) (BLOOD--COAGULATION)  
(VERTEBRAL ARTERY--DISEASES)

KHUNDANOV, L.Ye.; SHKURKO, Ye.D.; KUPITSEVICH, I.Ye.; SMIRNOVA, L.A.

Combined treatment of experimental plague using antibiotics  
and gamma globulin. Antibiotiki 6 no.11:1039-1042 N '61.  
(MIRA 15:3)

1. Irkutskiy nauchno-issledovatel'skiy protivochumnyy  
institut Sibiri i Dal'nego Vostoka.  
(GAMMA GLOBULIN) (ANTIBIOTICS) (PLAGUE)



SMIRNOVA, L.A.; SOINA, N.V.

Frequency characteristics of a system of two coupled stages, one of which contains a variable capacitance. Izv. vys. ucheb. zav.; radiotekh. 6 no.3:301-302 My-Je '63. (MIRA 16:9)

1. Rekomendovana kafedroy eksperimental'noy fiziki Moskovskogo pedagogicheskogo instituta imeni Lenina.  
(Parametric amplifiers)

ED. LERMAN, M.I.; RAZUVAYEV, G.A.; NOVIKOVA, Ye.I.; SMIRNOVA, I.G.,  
FRPUSHCH, A.I.

Interaction of 2,4,6-triphenyl-1-phenoxy with solvents.  
Izv. AN SSSR. Ser. khim. no.8:1530-1532 Ag '64.

(MIRA 17:9)

1. Institut khimicheskoy fiziki AN SSSR i Gor'kovskiy  
gosudarstvennyy universitet im. N.I. Lobachevskogo.

SMIRNOVA, L.A.; BASYUKHINA, L.V.

Susceptibility of Brand's vole to experimental tularemia. Izv. Irk.  
gos.protivochum.inst. 9:50-52 '51. (MIRA 10:12)  
(TULAREMIA)

KLETS, E.I.; AHRUSTSELEVSKIY, V.P.; KOLESNIK, R.S.; KUDINOVA, Z.S.;  
OL'KOVA, N.V.; SMIRNOVA, L.A.

Susceptibility of tarbagans and Eversmann susliks to experimental  
plague. Tez.i dokl.konf.Irk.gos.nauch.-issl.protivochum.inst. no.  
1:15-17 '55. (MIRA 11:3)  
(RODENTIA--DISEASES AND PESTS) (PLAGUE)

*SMIRNOVA, L.A.*  
KLETS, B.I.; KOLESNIK, R.S.; KHRUSTSELEVSKIY, V.P.; SMIRNOVA, L.A.; KUDINOVA,  
Z.S.; OL'KOVA, N.V.

Experimental plague in tarbagans and Eversmann susliks. Tex. i dokl.  
konf. Irk.gos.nauch.-issl.protivochum. inst. no.2:23-24 '57.  
(PLAGUE) (MIRA 11:3)  
(RODENTIA--DISEASES AND PESTS)

KLETS, E.I.; KHRUSTSELEVSKIY, V.P.; KOLESNIK, R.S.; KUDINOVA, Z.S.;  
OL'KOVA, N.V.; SMIRNOVA, L.A.

Susceptibility of Siberian marmots and long-tailed susliks  
to experimentally induced plague. Izv.Irk.gos.nauch.-issl.  
protivochn.inst. 14:3-18 '57. (MIRA 13:7)  
(RODENTIA--DISEASE) (PLAGUE)

KLETS, E.I.; KOLMSNIK, R.S.; KHRUSTSELEVSKIY, V.P.; SMIRNOVA, L.A.;  
KUDINOVA, Z.S.; OL'KOVA, N.V.

Experimental plague among marmots and long-tailed suslike.  
Izv.Irk.gos.nauch.-issl.protivochum.inst. 20:15-30 '59.

(MIRA 13:7)

(PLAGUE) (MARMOTS--DISEASES AND PESTS)  
(SUSLIKS--DISEASES AND PESTS)

SMIRNOVA, L.A.

Determination of the immunologic properties of an attenuated  
plague strain. Izv.Irk.gos.nauch.-issl.protivochum.inst. 20:  
219-224 '59. (MIRA 13:7)  
(PASTURELLA PESTIS)



OL'KOVA, N.V.; SMIRNOVA, L.A.

Seasonal susceptibility of marmots and long-tailed susliks to  
experimental plague. Izv. Irk. gos. nauch.-issl. protivochum.  
inst. 21:70-81 '59. (MIRA 14:1)

(MARMOTS—DISEASES AND PESTS)

(SUSLIKS—DISEASES AND PESTS)

(PLAGUE)

KHUNDANOV, L.Ye.; KUPITSEVICH, Ye.I.; DEMIDOVA, Ye.K.; SMIRNOVA, L.A.;  
SHKURKO, Ye.D.

Compound treatment of experimental melioidosis with antibiotics  
and sulfodimesin. Antibiotiki 6 no.11:1013-1016 N '61. (MIRA 15:3)

1. Irkutskiy nauchno-issledovatel'skiy protivochumnyy institut  
Sibiri i Dal'nego Vostoka.  
(MELIOIDOSIS) (SULFAMETHAZINE) (ANTIBIOTICS)

KHUNDANOV, L.Ye.; KUPITSEVICH, Ye.N.; DEMIDOVA, Ye.K.; SMIRNOVA, L.A.;  
SHKURKO, Ye.D.

Combined therapy of experimental melioidosis. Veterinariia 38  
no.10:55-57 0 '61. (MIRA 16:2)

1. Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy  
protivochumnyy institut Sibiri i Dal'nego Vostoka.  
(Melioidosis) (Antibiotics) (Sulfamethazine)

KHUNDANOV, L. E., SHKURKO, E. D., SMIRNOVA, L. A., KEMIDOVA, E. K. and KULIKOVA, G. G. (Irkutsk State Scientific Research Antiplague Institute of Siberia and Far East)

"Sulfanilamide preparations in experimental melioidosis"

Veterinariya, vol. 39, no. 4, April 1962 p. 51

SMIRNOVA, L.A.

Plastic surgery of short leg-stumps as a preparation for prostheses.  
Khirurgiia, Moskva no.4:58-63 Ap '50. (GLML 19:2)

1. Of the Orthopedic Clinic of Dnepropetrovsk Medical Institute  
(Director -- Prof. T.M.Stepanov) and of the Prosthetic Hospital  
(Head -- S.K.Kokin, Major Medical Corps).

SMIRNOVA, L.A.

Results of primary flap amputations of the lower extremities with special considerations on prosthesis. Khirurgiia, Moskva no. 1:51-56 Jan 1953.  
(CIWL 24:2)

1. Docent. 2. Of the Orthopedic Clinic (Director -- Prof. T. M. Stepanov), Dnepropetrovsk Medical Institute.

SMIRNOVA, L.A.;SERGEYEVA, T.I.;MEN', M.L.;BONDARYUK, A.S.;KARARLITSKAYA, Ye.A.;  
DUBOVIK, V.Ye.;YAROSH, A.P.;ZELENSKAYA, G.Ye.

In memory of T. M. Stepanov. Khirurgiia, Moskva no.4:91-92 Apr 1953.  
(CJML 24:4)

1. Obituary.

USSR/Human and Animal Morphology (Normal and Pathological)  
Peripheral Nervous System

S-3

Abs Jour : Ref Zhur - Biol., No 12, 1958, No 55081

Author : Smirnova, L.A.  
Inst : Dnepropetrovsk Institute of Medicine.  
Title : The Problem of Innervation of the Peristeum and of the Femur.  
Orig Pub : Sb. nauchn. rabot. Dnepropctr. med. in-t, 1956, 2, 183-185

Abstract : The femur (thigh bone) is innervated by the ramifications of the upper gluteal sciatic and femoral nerves. The largest and basic peristeum-osseous femoral nerve originates in the posterior ramification of the gluteal nerve. It passes through muscles and bifurcates before entering the feeding orifice on the anterior surface of the thigh. One part of it turns to the peristeum, the other to the bone marrow after passing through the medulla ossium. The peristeum-osseous femoral nerve does not always accompany the vessels. The ramule of the femoral nerve descends below the feeding

Card : 1/2

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SMIRNOVA, L.A., dotsent; BONDARYUK, A.S.

Treating spinal injuries and the ability to work. Ortop.travm. i  
protez. 17 no.6:104 N-D '56. (MLRA 10:2)

1. Iz kafedry gosptal'noy khirurgii (zaveduyushchiy - zasluzhenny  
deyatel' nauki professor T.Ye. Gnilyov) Dnepropetrovskogo meditsin-  
skogo instituta (direktor - dotsent D.P.Chukhriyenko) i oblastnoy  
bol'nitsy (glavnyy vrach - I.A.Lobanov)  
(SPINE--WOUNDS AND INJURIES)

USSR / Human and Animal Physiology (Normal and Pathological). Neuromuscular Physiology T

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 97317

Author : Smirnova, L. A.

Inst : Dnepropetrovskiy Medical Institute

Title : Changes in Motor Chronaxis of the Muscles in an Experimental Bruise of the Thigh

Orig Pub: Sb. nauchn. tr. Dnepropetr. med. in-t., 1957, 3, 221-225

Abstract: Two- to three-year-old dogs were trained before the experiment to lie quietly on the table with tied fore extremities. After determining the stable reobase (R) and chronaxis (C) (for duration of several days), a blow on the external surface of the right

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USSR / Human and Animal Physiology (Normal and Pathological). Neuromuscular Physiology T

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 97817

thigh was tiven to the animal under ether narcosis. The next day the R of musculus quadriceps on the traumatized thigh increased from 31 to 50 v, and its C increased from 0.14 to 0.38 msec. R of musculus biceps femoris increased from 31 to 47 and its C from 0.16 to 0.24 msec. The curve of C of musculus quadriceps increased three times as much as musculus biceps. Excitability in these cases fell in unequal degrees. On the seventh day the curves of R and C again increased and remained on the same level in the course of the second week. From the 17th day a slow drop in R and C to the original numbers was noted. Restoration of disturbed excitability of the muscles after trauma occurred only toward the end of the month. The blow influenced

Card 2/3

SMIRNOVA, L.A. . dots. (Dnepropetrovsk, ul. Komsomol'skaya, d.65, kv.67)

Innervation of the femur and the femoral periosteum. Nov.khir. arkh.  
no.1:50-53 Ja-F '58 (MIRA 11:11)

1. Kafedra gistologii (zav. - chlen-korr. AMN SSSR zasl. deyatel'  
nauki prof. N.I. Zazybin), kafedra fakul'tetskoy khirurgii (zav.  
- chlen-korr. AN USSR prof. I.N. Ishchenko) Kiyevskogo meditsinskogo  
instituta i kafedra gosital'noy khirurgii (zav. - zasl. deyatel'  
nauki prof. T.Ye. Gnilyorov) Dnepropetrovskogo meditsinskogo instituta.  
(FEMUR--INNERVATION)

SMIRNOVA, L.A., dots.

Reactive changes in the peripheral nerves of the periosteum of the femur and the spinal ganglia caused by a bruise. Ortop., travm. protez. 19 no.1:74 Ja-F '58. (MIRA 11:4)

1. Iz kafedry gistologii (zav. - chlen-korr. AMN SSSR prof. N.I. Zazyhin) i kafedry fakul'tetskoy khirurgii (zav. - chlen-korr. AN USSR prof. I.N. Ishchenko) Kiyevskogo meditsinskogo instituta i kafedra gosspital'noy khirurgii (zav. - zasl.deyat. nauki prof. T.Ye. Gnilyorhov) Dnepropetrovskogo meditsinskogo instituta.

(NERVES--DISEASES)

(BONES--WOUNDS AND INJURIES)

S. L. L. L., Dec 1941 Sci -- (disc) "reactive change in periosteal and ~~osseous~~ nerves in ~~the~~ trauma of the femur and the effect of stimulation <sup>by</sup> therapy." Onopriyevsk, 1952. 18 pp (Kiev Order of Labor and Banner Med Inst in Acad S.A. Bogdanets). 200 copies, list of author's works at end of text (10 titles) (K1,32-52, 112)

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SMIRNOVA, L.A. (Dnepropetrovsk)

Effect of vitamin B<sub>12</sub>, dibazols, and proserine on bone regeneration  
in experimental rib fractures. Pat.fiziol. i eksp.terap. 3 no.4:39-  
44 J1-Ag '59. (MIRA 12:12)

1. Iz kafedry gosspital'noy khirurgii (zav. - zasluzhennyy deyatel'  
nauki prof. T.Ye. Gnilorybov) Dnepropetrovskogo meditsinskogo insti-  
tuta i kafedry gistologii (zav. - chlen-korrespondent AMN SSSR zasluzhen-  
ny deyatel' nauki prof. N.I. Zazybin) i kafedry fakul'tetskoy khirur-  
gii (zav. - chlen-korrespondent AN USSR prof. I.N. Ishchenko) Kiyev-  
skogo meditsinskogo instituta.

(RIBS fractures and dislocations)

(VITAMIN B<sub>12</sub> therapy)

(MUSCLE RELAXANTS therapy)

(PROSTIGMINE therapy)

SMIRNOVA, L.A., dotsent

Innervation of the periosteum and the hip bone. Trudy Ukr.  
nauch.-issl. inst. ortop. i travm. no.15:311-316 '59  
(MIRA 16:12)

1. Iz kafedry gistologii (zav. - chlen-korrespondent AMN SSSR,  
prof. N.I.Zazybin) Kiyevskogo meditsinskogo instituta i ka-  
fedry fiziologii (zav. - dotsent P.Ye. Motsnyy) Dnepropetrvsko-  
go gosudarstvennogo universiteta.



SMIRNOVA, L.A., dotsent (Dnepropetrovsk, Komsomol'skaya ul., d.65, kv.67)

Reactive changes of the periosteal and osseous nerves in hip fractures treated with intramedullary osteosynthesis. Vest. khir. 83 no.7:82-91 J1 '59. (MIRA 12:11)

1. Iz kafedry gistologii (zav. - prof.N.I.Zazybin) fakul'tetskoy khirurgicheskoy kliniki (zav. - prof.I.H.Ishchenko) Kiyevskogo meditsinskogo instituta i gospital'noy khirurgicheskoy kliniki (zav. - prof.T.Ye.Gniloryhov) Dnepropetrovskogo meditsinskogo instituta.

(HIP JOINT--FRACTURE)

(PERIOSTEUM--DISEASES)

SMIRNOVA, L.A.

Some clinical observations of the effect of vitamin B<sub>12</sub> on the  
regeneration of bone tissue in femoral fractures. Vit. res. i ikh  
isp. no.5:250-255 '61. (MIA 15:1)

1. Klinika ortopedii i travmatologii Dnepropetrovskogo meditsinskogo  
instituta.

(CYANOCOBALAMINE) (FEMUR FRACTURE)  
(REGENERATION (BIOLOGY))

SMIRNOVA, L.A., dotsent (Dnepropetrovsk, Komsomol'skaya ul., d.65, kv.67)

Modified fixation of a torn tendon of the long head of the biceps  
brachii. Ortop., travm.i protez. 22 no.4:66-68 Ap '61. (MIRA 14:11)

(SHOULDER--SURGERY) (TENDONS--INJURIES AND RUPTURES)

SMITH, L., M. F. Thompson, and J. H. Thompson.

Neuritic changes in the nerves of the pericardium in hip fractures  
in man. Ortop., travn. i protez. no.9:53-58 '64. (Mikolaj, J.)

in man. Ortop., travm. i protet., no.9:53-56 1964.

[illegible]

SMIRNOVA, L.A. (Dnepropetrovsk, Komsomol'skaya ul. d.5, kv. 67).;  
VISHNEVETSKAYA, Ye.A.

Significance of vitamin B<sub>12</sub> in the compound treatment of osteochondropathy  
of the caput femoris. Ortop., travm. i protez. 26 no.7:13-16 J1 '65.  
(MIRA 18:7)

1. Iz kliniki travmatologii i ortopedii (zav. - prof. L.A.Smirnova)  
Dnepropetrovskogo meditsinskogo instituta (rektor - prof. N.Ya.  
Khoroshmanenko) i detskogo kostnotuberkuleznogo sanatoriya (glavnyy vrach -  
N.S.Chernushenko).

SMIRNOVA, L.A., prof. (Dnepropetrovsk, Komsomol'skaya ul., d.65, kv.67)

Thirty-five years of the Orthopedic and Traumatological Department  
of the Dnepropetrovsk Medical Institute. Ortop., travm. i protez.  
26 no.8:83-85 Ag '65. (MIRA 18:9)

Smirnova, L. A.

"Protection of Rubber Against Ozone Cracking. " Thesis for degree of Cand. Technical Sci.  
Sub. 28 Nov 49, Moscow Inst. of Fine Chemical Technology imeni M. V. Lomonosov.

Summary 82, 18 Dec. 52, Dissertations Presented for Degrees in Science and Engineering in  
Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

SMIRNOVA, L. A.

2339. Combatting ozone cracking of vulcanised rubber articles. L. A. SMIRNOVA. *Stroenie Kautchukov i Rezin* ... 1960, p. 28-37, 130-1. The results of the study are summarized as they affect the tyre industry. The following methods of protection are recommended: a) for inner tubes, add 1 to 1.5% paraffin wax or coresin; making inner tubes of neoprene, Butyl, or other ozone-resistant rubber is the best solution; b) for tyre covers, add to the external rubber 1 to 1.5% of paraffin wax and similar substances and apply a hot wax after vulcanisation; c) for articles where production offers no particular difficulties, protection with a film of neoprene rubber is advised. These recommend-

ations apply not only for tyres but to most commercial rubber articles. The NIIEHP has devised a spraying technique for applying a protective layer, which has proved its value on a production scale.

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SOV/138-59-10-5/10

AUTHORS: Sakhnevskiy, N. L; Ivanova, S. A; Mel'nikova, M. V;  
Ratner, S. B; Reznikovskiy, M. M, and Smirnova, L. A.

TITLE: Wear Testing of Rubber (Ob otsenke ~~istirayemosti~~  
reziny)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 10, pp 18 - 22 (USSR)

ABSTRACT: The mechanism of abrasive wear of rubber is imperfectly understood. Laboratory tests with different types of equipment give inconsistent results, and results of laboratory tests do not agree with service or road tests. The relations between the three mechanical parameters, F, frictional force; N, normal load, and U, rubbing speed are discussed. Three modes of test are possible: (a) F, variable, N and U constant, (b) N, variable and (c) U, variable. These give respective wear indices:  $V_{NU}$ ,  $V_{FU}$ , and  $V_{NF}$  where V is expressed in  $\text{cm}^3$  wear from the specimen. A specific wear index, v, is given:  $v = V_{NU}/W$  ( $\text{cm}^3/\text{kwh}$ ) where W is work done against friction. This specific wear index takes into account the coefficient of friction  $\mu$  of the rubber. Since  $\mu$  varies for different rubbers, correlation between the indices  $V_{NU}$ ,  $V_{FU}$  and the specific index v,

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Wear Testing of Rubber

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will vary for different rubbers. This is illustrated in Figs. 1, 2 and 3 where the relative wear according to different indices is plotted against filler content in the rubber sample. Actual values for different rubbers of the indices  $V_{NU}$ ,  $v$ , and  $V_{PU}$  are given in Table 1. The specific wear index  $v$  is calculated only under the constant normal load regime. The final columns in the table give relative values for these indices for comparison with relative values obtained on actual service tests (given in the last column). The index  $V_{PU}$  shows best correlation with service or road tests, and it is suggested that this index would be more appropriate when testing rubber intended for tyres. This is brought out further in Fig. 4 where the relative indices of laboratory tests are compared with relative wear in actual road tests. (Symbols 1, 2, 3 and 4 are for tests giving an index  $V_{PU}$ , symbols 5 and 6 give  $V_{NU}$  and symbol 7 is for index  $v$ ). While indices  $v$  and  $V_{PU}$  should have similar correlation, errors can arise when  $v$  is taken as an index through changes in temperature at the rubbing surface. The third mode of test with  $F$  and  $N$  constant and with  $U$  variable has received little attention, but is of interest since it represents the conditions of wear

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Wear Testing of Rubber

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through skidding. Wear tests under laboratory conditions and road or service tests have different intensity, particularly as regards temperature. Table 2 compares contact pressure, rubbing speed and temperature for a tyre at 30 km/hr with 3% slip with conditions under the GOST 423-57 (Government Standard) test under constant load conditions on a Grassel test machine. The contact pressure in the laboratory test is very much lower while the temperature is much higher. The wear index  $V_{N0}$  is not proportional to the normal load  $N$ . However, the product  $v\mu$  is proportional to  $N$  and is a suitable wear index as has been proved on tests with  $N$  varying from 0.5 to 12 kg/cm<sup>2</sup>. It is suggested that it would be more realistic to conduct laboratory tests at high contact pressures, but to reduce the coefficient of friction by using less abrasive test surfaces. Methods using radioactive tracers could enable the intensity of laboratory tests to be

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Wear Testing of Rubbers

SOV/138-59-10-5/10

brought down to a level which would simulate road tests more exactly and still retain sensitivity of test. There are 4 Figures, 2 Tables and 25 References: 13 English, 3 Soviet, 2 French and 2 German

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific-Research Institute of the Tire Industry and Scientific-Research Institute of the Rubber Industry)

Card 4/4

SOV/63-4-1-5/31

15(9)

AUTHORS: Sakhnovskiy, N.L., Smirnova, L.A., Candidate of Technical Sciences

TITLE: The Problem of Wear-Resistance of Rubbers and Methods for Its Improvement. (Problema iznosostoykosti rezin i puti yeye povysheniya)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1, pp 35-41 (USSR)

ABSTRACT: At the present time there is no theory of the wear resistance of rubbers. According to Reference 12 the action of high temperatures and mechanical activation leads to oxidation of the rubber. Wear-resistance is a variable quantity depending on the composition and the properties of the rubber, the design of the tread, the type of road, atmospheric conditions, etc. There is no laboratory method for evaluating the wear-resistance of tires. The wear of the tire made of the new rubber is compared with a control tire. The wear is indicated by the percentage of the wear in the tested tire compared to the control tire and by the wear of the tread measured in mm per 1,000 km. In Soviet tires natural rubber NK; butadiene-styrene rubber BSK

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SOV/63-4-1-5/31

The Problem of Wear-Resistance of Rubbers and Methods for Its Improvement

and polybutadiene rubber SKB is used for treads. The wear in motorcycle races is 1 mm per 100 km, in truck tests 0.2 - 0.25 mm per 1,000 km. For tires in light vehicles with fast starts and frequent braking the rubbers of type BSK are used. In the USSR an oil-filled divinyl-styrene rubber of low-temperature polymerization SKS-30AM is employed in the production of tire treads. Wear-resistance increases with the molecular weight. It is inversely proportional to the content of low-molecular fractions. For every 2.5°C of the lowering of polymerization temperature, the rubber wear-resistance increases by 1%. Severe operating conditions reduce the wear-resistance considerably. At a speed of 113 km/h the mileage of a tire tread is 27,000 km; at 137 km/h it is 14,400 km. Polyurethane rubbers are very wear-resistant but it is difficult to connect them with the tire carcass. The same is true for butyl-rubber. Methylvinyl-pyridine rubbers are too expensive for large-scale application. Divinyl-styrene-carboxylate rubber is very wear-resistant but it has a tendency to scorching. The quality of the filler is determined by the size of the carbon black particles. The physical-chemical properties of various

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SOV/63-4-1-5/31

The Problem of Wear-Resistance of Rubbers and Methods for Its Improvement

blacks and the mechanical properties of the rubbers made with them are shown in Table 6. Synthetic resins, especially those formed on the base of formaldehyde, increase the wear-resistance only under favorable operating conditions. Under severe conditions the resistance of such rubbers is only 70% of the usual types. Polyethylene as filler reduces hysteresis but wear is considerable.

There are 2 graphs, 7 tables, and 51 references, 13 of which are Soviet, 25 English, 12 German, and 1 French.

Card 3/3

SMIRNOVA, L.A.

Bulletin of the Omek Tire Plant. Kauch. i rez. 18 no.1:64 Ja '59.  
(MIRA 12:1)

(Omsk--Tires, Rubber--Periodicals)



S/138/60/000/01/03/010

AUTHORS: Sakhnovskiy, N.L., Yevstratov, V.F., Smirnova, L.A., Katkov, V.I.

TITLE: Rating of Wear Resistance of Tread Rubbers in Operation Tests of  
Tires 5

PERIODICAL: Kauchuk i Rezina, 1960, No. 1, pp. 10 - 15

TEXT: With the highly resistant cord being produced at present the wear of the tread in a tire is the basic reason for the eventual failure of a tire. Great importance is therefore being attached to the method of rating the wear resistance of rubber compounds. In this connection the article offers certain recommendations, which are based on the investigations conducted by NIISHP (Scientific Research Institute of the Tire Industry) during the last 3 years. Ordinary road tests are not sufficiently reliable for rating, due to the fact that they cover too wide a range of results, depending upon the conditions under which these road tests have been performed, such as kind and condition of roads, type of automobile, speed, load, position of tire, season, climatic condition, weather etc. A wet road, for instance, is liable to reduce wear of a tire 12 times. More reliable results can be obtained, if a batch of standard and experimental tires are tested simultaneously in one

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S/138/60/000/01/03/010

Rating of Wear Resistance of Tread Rubbers in Operation Tests of Tires

is explained in the article as well as the formula which permits to calculate the relative average wear resistance of the tread. The method recommended for carrying out road tests for rating wear resistance permits results to be obtained in a comparatively short period of time (after about 8-12 thousand km) by reducing the range of results 2-3 times as compared with results of ordinary road tests. There are 6 tables, 4 graphs, 3 diagrams and 10 references: 2 Soviet, 6 English and 2 French.

ASSOCIATION: NIISHP (Scientific Research Institute of the Tire Industry)

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S/138/60/000/003/007/007

A051/A029

AUTHORS: Tarasova, Z.N.; Priss, L.S.; Smirnova, I.A.  
TITLE: The VII Scientific Conference for High-Molecular Compounds III  
PERIODICAL: Kauchuk i Rezina, 1960, No. 3. p. 54

TEXT: The VII nauchnaya konferentsiya po vysokomolekulyarnym soyedineniyam (VII Scientific Conference on High-Molecular Compounds) took place on February 8 - 13, 1960, in Leningrad. It was organized by the Institut vysokomolekulyarnykh soyedineniy (Institute of High-Molecular Compounds) (IVS) of the AS of the USSR. There were 57 papers presented on the following subjects: the mechanism of polymerization and destruction, stereo-regular polymers, the synthesis of polymers, the mechanical properties of polymers, solutions of polymers, cellulose and its derivatives, the relaxation properties and structure of polymers, biopolymers. A paper on the investigation of molecular weight distribution of polycondensation products was presented by S.E. Bresler, Yu.Ya. Gotlib and S.Ya. Frenkel. Macroradicals were also investigated by these authors. A number of papers was dedicated to the subject of the effect of orientation and molecular weight on the strength and creeping of various polymers in the vitrified state. ✓

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2209

AUTHORS: Sakhnovskiy, N.L., Smirnova, L.A., Yevstratov, V.F.  
TITLE: The Dependence of the Wear-Resistance of Protector Rubbers  
on Their Composition and Properties  
PERIODICAL: Kauchuk i Rezina, 1960, No. 4, pp. 22 - 26

TEXT: The wear-resistance of rubber is studied in the USSR in the following fields: the wear-mechanism in tire casings, development of a composition of wear-resistant rubber, production of tires of a new design, developing methods for the evaluation of wear-resistance, etc. The relationship between the wear-resistance in rubber and some of its other properties, as well as the dependence of the wear-resistance on the type of polymer and carbon black used were studied here. The effects of temperature, mechanical friction and other factors on the wear of rubber were tested. With a variation in the testing conditions the absolute wear on the rubber will differ accordingly. Table 1 shows the figures obtained in the laboratory from tests of the relative wear-resistance in rubber produced from a natural rubber and CKS (SKB) base. As a result of the laboratory tests it was established that

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The Dependence of the Wear-Resistance of Protector Rubbers on Their Composition and Properties

with an increase in the rubber modulus, the wear-resistance increases proportionately to the increase in the intensity of the wear (Fig. 2). It appeared that the greatest increase in wear-resistance is found to be under conditions of maximum wear intensity. A study of wear-resistance was also carried out on protector rubber based on SKB, CKC-30AM (SKS-30 AM) and natural rubber polymers. The obtained data revealed that rubber on an SKB base is significantly surpassed by the SKS-30AM rubber. At present SKB in protector rubber is replaced by butadiene-styrene rubber. Natural rubber seemed to surpass SKB rubber, although the former is largely dependent on temperature. Additionally obtained data confirm the existing belief that the wear-resistance is dependent on the molecular weight and that the molecular weight distribution also has an effect on the wear-resistance. The CK(SKI) rubber was also investigated as one of the new types of synthetic polymers and compared to that of natural rubber. The authors state that the successful solution of the problem for increasing the wear-resistance in rubber can be achieved by organizing a series of systematic investigations in the following manner: 1) a study of the mechanism of the wear in protector rubber under various con-

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SHALLAMAKH, A.; SMIRNOVA, L.A. [translator]; KRAGEL'SKIY, I.V. [translator]

Part played by hysteresis in tire wear and in laboratory abrasion.

Kauch.i rez. 19 no.8:58-63 Ag '60. (MIRA 13:9)

(Tires, Rubber--Testing)

S/138/61/000/003/002/006  
A051/A129

AUTHORS: Buyko, G. N.; Sakhnovskiy, N. L.; Yevstratov, V. F.; Smirnova, L. A.; Levitina, G. A., and Katkov, V. I.

TITLE: Certain features of carboxyl-containing butadiene-styrene SKS-30-1 rubber and its evaluation in tread rubbers

PERIODICAL: Kauchuk i rezina, no. 3, 1961, 9-15

TEXT: The results of an investigation are given, which was conducted to develop a formulation and conditions for manufacturing wear-resistant tread rubber based on carboxyl containing butadiene-styrene CKC-30-1 (SKS-30-1) rubber. The results of an evaluation of the properties of rubbers and tires using treads based on the above-mentioned rubber are given. In developing the formulation of the tire tread rubber based on SKS-30-1 the best fillers were found to be the active furnace XAΦ (KhAF)-type carbon blacks. The extract of phenol purification (ПН-6, PN-6), 10 w.p., was the best softener used in the amount of 45 w.p. of the KhAF carbon black (Vulkan 3) and ensuring a plasticity of the mixture according to Carriere of about 0.50. Magnesium oxide was chosen as the main vulcanizing agent based on work of

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Certain features of ..

the VNIISK (Dolgooplosk, B. A., et al. - Ref. 1: Kauchuk i rezina, no. 3, 11, 1957; Ref. 2: Kauchuk i rezina, no. 6, 1, 1957). The vulcanizing group contained also thiuram and zinc oxide. The following vulcanizing group was selected (in w.p.): MgO - 2.0, ZnO - 1.0, sulfur - 0.8, thiuram - 1.0. The tire tread mixtures based on SKS-30-1 were prepared according to a double-stage process. It was noted that scorching depends to a great extent on the meteorological conditions during the period of the mixture preparation. It is assumed that the main reason for the scorching tendency of the SKS-30-1 mixtures in the fall and spring is apparently due to an elevated moisture content in the ingredients. It was shown that water has a significant effect on the scorching of the SKS-30-1 mixtures. The effect of the water increases with the content of metal oxides in the mixtures. The highly significant effect of small quantities of water on the scorching of SKS-30-1 mixtures containing metal oxides is explained by the fact that when water is added to the various micro-sections of the mixtures a polar medium is formed facilitating the interaction between the polymer acid and the metal oxides at comparatively low temperatures. A simple method for the removal of water is given, viz., the mechanical treatment of the mixtures at elevated temperatures over long periods of time. Experiments showed that when storing the

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mixtures for a period of ten days no noticeable increase in the moisture content or a tendency to scorching is observed (Fig. 4). The properties of the SKS-30-1 based rubber are compared to that of SKS-30ARKM and NR. The outstanding feature of the SKS-30-1 based rubber is said to be the combination of a high static modulus with a high relative elongation. It has superior resistance to thermal aging and its main advantage over the other two types is its extremely high resistance to crack growth in repeated bending. One of its disadvantages is its comparatively low temperature-resistance manifesting itself in a significant drop of the tensile strength at high temperatures. However, the latter property improves noticeably during the aging process contrary to SKS-30ARKM and NR based rubbers. The tensility properties of the SKS-30-1-based rubber during the rolling process improve as opposed to the other types. The difference between SKS-30-1 rubber on one hand and NR and SKS-30ARKM rubbers on the other is noted in the dependence of the heat-resistance coefficient in tear-resistance on the roadability of the tires in stationary tests (Fig. 6). As to its hysteresis properties the SKS-30-1 rubber resembles the rubbers based on butadiene-styrene and is much inferior to NR. Data on experimental procedures showed that non-filled SKS-30-1 rubber contrary to SKS-30ARKM and NR rubber has a high wear-resistance

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under certain conditions. Tests of the tire tread rubber based on three types were performed on the ИМУ-3 (IMI-3) instrument and showed no significant differences in their wear-resistance. The dependence of the wear-resistance (in SKS-30-1 rubber) on the medium where the test is conducted is expressed to a lesser degree. This indicates a lesser intensity of the oxidation processes taking place in it during wear of the SKS-30-1 rubber as compared to the other varieties. The wear of SKS-30-1 rubber on a metallic grooved surface is much less. The results of service tests for both cars and trucks showed that tread rubber based on SKS-30-1 material exceeds the other materials in its wear-resistance, e. g., that of SKS-30ARKM and SKS-30AM. Tire treads based on SKS-30-1 rubber were tested on the road and under stationary conditions. The first batch of the truck and automobile tires were damaged completely owing to a breakdown of the protector joint after a 5 - 15 thousand km run. It is recommended removing the upper scorched layer of the joint when producing SKS-30-1 treads. The relationship of the joint stability in SKS-30-1 treads to the type of adhesive layer shows: 1) that adhesives based on NR sharply decrease the stability of the joint, 2) the adhesives based on BSK ensure a higher stability of the joints, 3) the greatest joint stability is obtained when using stable adhesives based on SKS-30-1.

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One of the disadvantages of SKS-30-1 tires is said to be the lowered stability of the adhesion between the tread and the breaker based on NR. One of the outstanding features of the SKS-30-1 tire treads as compared to other types, such as butadiene-styrene rubber is the absence of tire damage due to a defect by cracking along the grooves of the tread. The authors conclude that the carboxyl-containing rubbers are promising for use in tread rubber for the automobile industry. There are 6 tables, 6 graphs, 1 photograph and 4 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti  
(Scientific Research Institute of the Tire Industry)

Card 5/5

STRONGIN, M.A.; SMIRNOVA, L.A.

Development of the tire industry between the 20th and 22d  
Congresses of the CPSU. Kauch. i rez. 20 no.9:1-4 S '61.  
(MIRA 15:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Tires, Rubber)

SMIRNOVA, L.A.

Conference of young specialists of the Scientific Research  
Institute of the Tire Industry. Kauch. i rez. 20 no.9:57..  
58 S '61. (MIRA 15:2)

(Tires, Rubber)

FALOMKIN, I.V.; FILIPPOV, A.I.; KULYUKH, M.M.; PONTECORVO, B.;  
SHCHERBAKOV, Yu.A.; SOKLYAYEV, R.M.; TSUPKO-SITNIKOV, V.M.;  
ZAYMIDOROGA, O.A.; SMIRNOVA, L.A.[translator]; SARANTSEVA,  
V.R., tekhn. red.

Measurement of the  $\mu^- + \text{He}^3 \rightarrow \text{H}^3 + \nu$  reaction rate. Dubna,  
Ob"edinennyi in-t iadernykh issledovaniy, 1962. 7 p.  
(No subject heading)

BLOKHINTSEV, D.I.; SMIRNOVA, L.A.[translator]

Non-linear scalar field theory. Dubna, Ob"edinennyi in-t iader-  
nykh issledovani, 1962. 7 p.

(No subject heading)

DOMOKOS, G.; SMIRNOVA, L.A.[translator]; SARANTSEVA, V.R., tekhn.  
red.

Regge-poles and elastic scattering at high energies. Dubna,  
Ob"edinennyi in-t iadernykh issledovani, 1962. 9 p.

1. On leave from the Central Research Institute for Physics of the  
Hungarian Academy of Sciences, Budapest (for Domokos).  
(No subject heading)



WAN YUNG-CHANG; VEKSLER, V.I.; DU YUAN-CAI; Kladnitskaya, Ye.N.;  
Kuznetsov, A.A.; NGUYEN DINH-TU; SOKOLOVA, Ye.S.; SOLOV'YEV,  
M.I.; PENEV, V.N.; MIHUL, A.; SMIRNOVA, L.A. [translator]; SARANTSEVA,  
V.R., tekhn. red.

A study of  $\Lambda K^0$  and  $K K^0$  pair production in  $\pi^- p$  interactions

at the  $\pi^-$ -meson momentum of 7-8 BeV/c. Dubna, Ob"edinennyy  
in-t iadernnykh issledovaniy, 1962. 15 p.

1. On leave from the Institute of Atomic Physics, Bucharest (for Mihul).  
(No subject heading)

MARKOV, M.A.; SMIRNOVA, L.A.[translator]; SARANTSEVA, V.it., tekhn.  
red.

On a regularization method in the field theory. Dubna,  
Ob"edinennyi in-t iadernykh issledovaniy, 1962. 16 p.  
(No subject heading)

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ACCESSION NR: AP5005994

S/0246/64/064/008/1172/1176

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B

AUTHOR: Ivanova, R. A. (Moscow); Mil'shteyn, G. I. (Moscow); Smirnova, L. B. (Moscow); Fanchenko, N. D. (Moscow)

TITLE: Effect of nicotinic acid on experimental psychoses caused by lysergic acid diethylamide

SOURCE: Zhurnal nevropatologii i psikiatrii, v. 64, no. 8, 1964, 1172-1176

TOPIC TAGS: psychotherapy, organic nitrogen compound, psychoneurotic disorder

Abstract: The successful use of nicotinic acid (usually in large doses) in treating various psychic disorders is not often indicated in the literature. This deficiency led to study of the effect nicotinic acid has on several physiological and biochemical indices characterizing experimental lysergic psychosis in animals. The study was performed on 20 adult dogs. The animals were administered lysergic acid (LSD) intramuscularly in a dose of 0.1-0.2 mg/kg of bodyweight; nicotinic acid was also given intramuscularly in a dose of 5 mg/kg, or intravenously in a 3 mg/kg dose against a background of intense suppression of higher nervous activity, manifested as complete disruption of an earlier developed behavioral habit (running through a maze). It was found that administration of the LSD led to disappearance of conditioned

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reflexes both to light and sound. Unconditioned response to current followed by an auditory signal was curtailed. Nicotinic acid was administered 25 minutes after LSD was given. In another 30 minutes unstable conditioned reflexes to sound and responses to current appeared. In 60 minutes more, the dog reacted to sound and current reinforced by light without error and in all trials. In 2½ hours, the original relationships were restored. It was thus found that nicotinic acid is an effective therapeutic agent with respect to the leading symptoms of experimental psychosis induced by LSD. Orig. art. has 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 05Apr63

ENCL: 00

SUB CODE: LS, PH

NO REF SOV: 006

OTHER: 010

JPRS

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